



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,073	01/16/2004	Jong Cheol Choi	1630-0503PUS1	5287

2292 7590 11/20/2009  
BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
----------

SELLERS, DANIEL R

ART UNIT	PAPER NUMBER
----------	--------------

2614

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

11/20/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/758,073	<b>Applicant(s)</b> CHOI, JONG CHEOL	
	<b>Examiner</b> DANIEL R. SELLERS	<b>Art Unit</b> 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,5-8,10-12,16-19,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5-8,10-12,16-19,21 and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 261415

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 8/17/09 have been fully considered but they are not persuasive.
2. Regarding the independent claims 1, 7, 12 and 18, the examiner respectfully disagrees. RG teaches the feature of "excluding a range less than a minimum audio reference level" by virtue of "the RMS values are sorted into numerical order, and the value 5% down the list chosen to represent the overall perceived loudness of the signal" (see RG's calculation page, "3. Statistical Processing"). The act of sorting the RMS values in numerical order teaches that they are sorted in order from smallest (i.e. quietest) to largest (i.e. loudest), and choosing the value 5% down the list excludes "certain parts of the decoded data having an audio level outside of a prescribed range extending from a maximum audio reference level to a minimum audio reference level". The claimed limitations do not pose limitations on a "prescribed range", "maximum audio reference level", or "minimum audio reference level", therefore the terms are given the broadest reasonable interpretation. The examiner believes the art meets this interpretation, wherein the RMS value 5% down the sorted list excludes a maximum audio reference level (i.e. anything 4% and above) and a minimum audio reference level (i.e. anything 6% and down). The prescribed range maybe small (i.e. 5% down from the top of the list), however RG teaches this range.
3. Regarding the dependent claims, see the preceding arguments and the following rejection with respect to claims 5, 6, 8, 10, 11, 16, 17, 19, 21, and 22.

Art Unit: 261415

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. **Claims 1, 5-8, 10-12, 16-19, 21 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Replay Gain in view of Takahiro, JP 02-089252, and MP3 CD Maker, (hereinafter RG, Takahiro, and MP3 CD Maker, respectively and all previously cited).

6. Regarding **claim 1**, RG teaches a method for controlling an audio recording level, comprising the steps of:

*a) detecting audio data and determining an audio level average of the audio data (see RG's Calculation page, "2. RMS Energy Calculation", ([http://web.archive.org/web/20010827010748/privatewww.essex.ac.uk/~djmrob/replaygain/calculating\\_rg.html](http://web.archive.org/web/20010827010748/privatewww.essex.ac.uk/~djmrob/replaygain/calculating_rg.html)), archived on 08/27/2001, and hereinafter calculation page); and*

*b) variably controlling an audio level of a song to be recorded later on the basis of the audio level average (see RG's Outline page, Basic Steps, #4, (<http://web.archive.org/web/20010827022814/privatewww.essex.ac.uk/~djmrob/replaygain/outline.html>), archived on 08/27/2001, and hereinafter outline page),*

*wherein the step b) comprises:*

*calculating an offset value between the detected audio level average and an audio level average of a **reference file** (see RG's Calibration pages, pp. 1-2, specifically p.2, "Implementation",*

*(<http://web.archive.org/web/20020106152700/http://privatewww.essex.ac.uk/~djmrob/replaygain/calibration.html>), archived on 01/06/2002, and hereinafter calibration page);*

*adjusting an audio level of a subsequent song unit on the basis of the offset value (see calculation page, "4. Calibration with reference level"); and*

*encoding and **storing** the subsequent song unit having the adjusted audio level (see calculation page, "4. Calibration with reference level", wherein the difference is "store[d]... in the audio file"), and*

*wherein the step (a) determines the audio level average of the decoded data by excluding certain parts of the decoded data having an audio level outside of a prescribed range extending from a maximum audio reference level to a minimum audio reference level. (see calculation page, "3. Statistical Processing")*

Art Unit: 261415

The introduction page, "Replay Gain - A Proposed Standard", (<http://web.archive.org/web/20011005165428/privatewww.essex.ac.uk/~djmrob/replaygain/index.html>) (archived on 10/05/2001 and hereinafter introduction page) links to the contents page by the "Read on to find out more" link, (<http://web.archive.org/web/20011031173847/privatewww.essex.ac.uk/~djmrob/replaygain/contents.html>) (archived on 10/31/2001 and hereinafter contents page). The calculation page is linked to "6. Calculating the replay gain" on the contents page, and the outline page is linked to "4. Outline of the Replay Gain Proposal" on the contents page. RG teaches calculating an offset value between the detected audio level average and an audio level average of a previously recorded file (RG's Calibration page, p. 2, "Implementation"). On the calibration page, RG teaches a pink noise audio file to create a reference audio level average, to which every subsequent song is compared (i.e. the replay gain is the difference between the average level of the pink noise file and the current song's detected audio level average). RG also teaches adjusting the audio level based on the offset value (see calculation page, "4. Calibration with reference level"). RG, on the calculation page, teaches determining the audio level average (RMS), wherein it excludes audio levels outside a prescribed range by virtue of choosing the RMS value 5% down from the top of the sorted list. However, RG does not appear to teach

*"calculating an offset value between the detected audio level average and an audio level average of a **previously recorded song**;"*

Takahiro teaches an automatic volume adjusting device, wherein a current song is adjusted according to a peak volume of a previously recorded song (abstract). It is

Art Unit: 261415

obvious to substitute the reference pink noise track with a previously recorded song, wherein RG provides source code to modify (see calibration page, p. 2, "Implementation", wherein "ref\_pink.wav" can be replaced by the teachings of Takahiro). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of RG and Takahiro for the purpose of adjusting the volume to a user's preferred volume level, wherein the preferred volume level would be the level at which the user set the system during the first played song. However, the combination of RG and Takahiro does not appear to teach

*"encoding and **recording** the subsequent song unit having the adjusted audio level"*

MP3 CD Maker teaches a program for writing MP3 or WAV songs to a writable compact disc. Specifically, MP3 CD Maker teaches a method of making a CD with normalized volumes, so that the songs are perceived to be played at the same volume (see MP3 CD Maker FAQ, p. 2, "What makes "Normalizing" the volume levels so cool?"). MP3 CD maker does not disclose the method of normalizing, but it would have been obvious to substitute the method taught by RG shown above. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of RG, Takahiro, and MP3 CD Maker to provide the user with a better audio experience. It would have been obvious for one of ordinary skill in the art at the time of the invention that a better experience would be obtained by adjusting the volumes before writing to a compact disc, so that a user can use any prior art CD player and amplifier to hear the "normalized" audio.

Art Unit: 261415

7. Regarding **claim 5**, see the preceding argument with respect to claim 1, the combination teaches a method as set forth in claim 1, further comprising

*simultaneously recording the audio data to a recording medium, and (c) recording the variably controlled audio level of the song to the recording medium (see MP3 CD Maker FAQ, p. 2, "What makes "Normalizing" the volume levels so cool?").*

8. Regarding **claim 6**, see the preceding argument with respect to claim 5, the combination teaches a method as set forth in claim 5, wherein

*the recording medium is one of the following:*

*an optical disk (see MP3 CD Maker FAQ, p. 2, "What makes "Normalizing" the volume levels so cool?"),  
a HDD (hard disk driver),  
a DRAM (dynamic random access memory), and  
a flash memory.*

The MP3 files are stored on a CD after adjusting the perceived volume.

9. Regarding **claim 7**, see the preceding argument with respect to claim 1. The combination teaches a method for controlling an audio recording level, comprising the steps of:

*a) decoding entry audio data to be recorded in song units, and determining an audio, level average of the decoded entry audio data (see calculation page and see RG 's File Format page, "Where to store them?",  
([http://web.archive.org/web/20010827020146/privatewww.essex.ac.uk/~djmrob/replaygain/file\\_format.html](http://web.archive.org/web/20010827020146/privatewww.essex.ac.uk/~djmrob/replaygain/file_format.html)), archived on 08/27/2001, and hereinafter file format page); and*

*b) variably controlling a level of subsequent decoded audio data on the basis of the determined audio level average (see RG 's Player Requirements page, "1. Scale audio to match Replay Gain",*

*(<http://web.archive.org/web/20010827024445/privatewww.essex.ac.uk/~djmrob/replaygain/player.html>), archived on 08/27/2001, and hereinafter player requirements page),*

*wherein the step b) includes the steps of:  
calculating an offset value between the detected audio level average and an audio level average of a previously recorded song (see Takahiro, abstract);*

*adjusting an audio level of a subsequent song unit on the basis of the offset value (see calculation page, "4. Calibration with reference level"); and*

*encoding and recording the subsequent song unit having the adjusted audio level (see calculation page, "4. Calibration with reference level", wherein the difference is "store[d]... in the audio file"), and*

Art Unit: 261415

*wherein the step (a) determines the audio level average of the decoded data by excluding certain parts of the decoded data having an audio level outside of a prescribed range extending from a maximum audio reference level to a minimum audio reference level. (see calculation page, "3. Statistical Processing")*

RG teaches decoding the audio data, wherein different file formats are proposed, such as MP3 and WAV formats (see calculation and file format pages). It is implicit that one of these formats is decoded to determine the audio level average. RG, on the calculation page, teaches determining the audio level average (RMS), wherein it excludes audio levels outside a prescribed range by virtue of choosing the RMS value 5% down from the top of the sorted list. The combination of RG, Takahiro, and MP3 CD Maker teaches the calculation between the detected audio level average and an audio level average of a previous song (see above with respect to Takahiro), and the combination teaches recording the adjusted MP3 files onto a optical disk (see above with respect to MP3 CD Maker).

10. Regarding **claim 8**, see the preceding argument with respect to claim 7. The combination teaches a method as set forth in claim 7, wherein the previously recorded song is a firstly recorded song (see Takahiro, abstract).

11. Regarding **claim 10**, the further limitation of claim 7, see the preceding argument with respect to claims 6 and 7. The combination teaches these features.

12. Regarding **claim 11**, see the preceding argument with respect to claim 7. The combination teaches a method as set forth in claim 7, wherein

*the decoded entry audio data is in a first audio format type, and the subsequent decoded audio data is in a second audio format type, the first and second audio format types different from each other (see introduction, wherein RG teaches a CD audio format and a subsequent MP3 audio format with metadata for title, artist, and CD track number).*



Art Unit: 261415

13. Regarding **claim 12**, see the preceding argument with respect to claim 1. The combination teaches an apparatus with these features, wherein it teaches a method performed on a personal computer system.

14. Regarding **claim 16**, the further limitation of claim 12, see the preceding argument with respect to claim 5. The combination teaches these features.

15. Regarding **claim 17**, the further limitation of claim 16, see the preceding argument with respect to claim 6. The combination teaches these features.

16. Regarding **claim 18**, see the preceding argument with respect to claim 7. The combination teaches an apparatus with these features, wherein it teaches a method performed on a personal computer system.

17. Regarding **claim 19**, the further limitation of claim 18, see the preceding argument with respect to claim 8. The combination teaches these features.

18. Regarding **claim 21**, the further limitation of claim 18, see the preceding argument with respect to claim 6. The combination teaches these features.

19. Regarding **claim 22**, the further limitation of claim 18, see the preceding argument with respect to claim 11. The combination teaches these features.

### ***Conclusion***

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 261415

Keller et al., US 6,621,768 B1 (previously cited) - teaches a compact disc recorder with normalization features (column 1, lines 24-43, column 4, lines 46-48, and column 24, lines 15-20);

Kincaid, US 7,072,477 B1 (previously cited) - teaches normalizing audio tracks in a portable digital device (figures 1-5 and abstract);

Nakano et al., (previously cited) - teaches an automatic gain control device for adjusting input sound signals to proper values (Column 1, lines 9-17);

Rzeszewski, (previously cited) - calculates a power level and compares it to a threshold (abstract);

Dougherty, (previously cited) - teaches dynamic compression and automatic gain adjustment (Column 1, lines 16-22 and Column 10, line 64 - Column 11, line 6); and

Mayer, (previously cited) - teaches automatic volume normalization (§ 0007).

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 261415

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL R. SELLERS whose telephone number is (571)272-7528. The examiner can normally be reached on Monday to Friday, 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel R. Sellers/  
Examiner, Art Unit 2614

/Vivian Chin/  
Supervisory Patent Examiner, Art Unit 2614